

PROGRESS REPORT #9
to the
EPA Long Island Sound Study
for LI-972309090

1. Project Title and EPA Grant Number:

Research to Fulfill the Long Island Sound Study's Goals and Targets (2009 NYSG Share)

EPA Grant Number LI-972309090

2. Grantee Organization and Contact Name:

The Research Foundation of SUNY on behalf of New York Sea Grant Institute
Ms. JeanAnn Johnston, Fiscal Officer

3. Project Period: October 1, 2009 – September 30, 2013, extended to 3/30/2014

Reporting Period: July 1, 2013 – December 31, 2013

4. Project Description: *Provide a brief overview of the project, including a reiteration of the goals and objectives of your project and the management implications of your work.*

Task 1: In the conduct of this project, the Connecticut and New York Sea Grant programs (CTSG and NYSG) will jointly administer a competitive research program to address the needs of the Long Island Sound Study (LISS). The *Long Island Sound Comprehensive Conservation and Management Plan* (CCMP) and the *Research, Monitoring, and Assessment Needs to Attain LISS Goals and Targets* (aka Needs Assessment) report, shall serve as the foundation for the program, with further input from the LISS Science and Technical Advisory Committee (STAC) on identifying the highest research priorities.

The first objective of this project is to identify and fund high priority, high quality research needed in order to best achieve the vision and the goals of the LISS CCMP and subsequent policy agreements.

A very similar effort was previously underway with EPA LISS funds from 2008 (Grant LI-972417080 to NYSG). Feedback from researchers and the STAC about the processes and outcomes of that project were used to fine-tune this one.

Task 2: This award also includes FY2010 funds to support meetings of the Long Island Sound Science and Technical Committee (LIS STAC).

5. Project Summary/Accomplishments: *Detail accomplishments during the reporting period, including a comparison of actual accomplishments with the outputs and outcomes specified in the workplan. For research grants, describe results to date, emphasizing their significance to the field, their relevance to the LISS' mission, and their potential practical applications.*

Task 1: Four of the six research projects continued to be underway during this period, as indicated below.

R/CE-31-NYCT ***“The influence of gelatinous zooplankton on nutrient cycles, hypoxia, and food webs across Long Island Sound”*** PIs: Darcy Lonsdale and Christopher Gobler. Start Date: 3/1/2011 End Date: 10/31/2013

Summary of Progress:

No formal reports were submitted during this reporting period. The project was in progress under a previously-approved no-cost extension until its end date on 10/31/2013. A Completion Report was requested by NYSG in December 2013, to be due in January 2014.

R/CMB-38-NYCT ***“Phase shifts among primary producers within Long Island Sound: Will anthropogenic stressors continue to expand the niche of PSP- and DSP-producing dinoflagellate blooms?”*** PI: Christopher Gobler. Start Date: 3/1/2011 End Date: 2/28/2013

Status:

This project ended on the date indicated above, and its subsequent Completion Report was summarized and provided with NYSG Progress Report #8 for EPA LIS grant LI-972309090.

R/CTP-44-NYCT ***“Sources and fate of nitrogen in the North Shore embayments”*** PIs: Gilbert Hanson and Teng-Fong Wong. Start Date: 3/1/2011 End Date: 12/31/2013

Summary of Progress:

No formal reports were submitted during this reporting period. The project requested, justified, and was approved by NYSG for a second no-cost extension, bringing its end date to 12/31/2013. It was in progress until its termination at the end of December. A Completion Report will be requested by NYSG early in 2014.

R/CTP-45-CTNY ***“Systematic evaluation of nitrogen removal by BMPs in the Long Island Sound watershed”*** PIs: Shimon Anisfeld and Gaboury Benoit. Start Date: 4/1/2011

Summary of Progress:

No formal reports were requested or submitted during this reporting period. A one-year no-cost extension was approved by CTSG, bringing the project’s end date to 2/28/2014. CTSG will solicit a Completion Report in April 2014.

R/CE-32-CTNY ***“Comparative analysis of eutrophic condition and habitat status in Connecticut and New York embayments of Long Island Sound”*** PIs: Jamie Vaudrey and Charles Yarish. Start Date: 3/1/2011

Summary of Progress:

No formal reports were requested or submitted during this reporting period. A one-year no-cost extension was approved by CTSG, bringing the project’s end date to 2/28/2014. CTSG will solicit a Completion Report in April 2014.

R/CTP-46-CTNY ***“Nitrogen removal capacity of Connecticut estuaries: Assessing distribution and controls”*** PI: Craig Tobias. Start Date: 5/1/2011 End Date: 2/28/2013

Summary of Progress:

The PI had submitted a Completion Report to CTSG that did not encompass all of the results. He committed to CTSG that he would rewrite it to incorporate the analysis of data collected. CTSG received this report in December 2013, see **Attachment 1**.

Task 2: Two STAC meetings were held during this reporting period. The first was on 9/20/2013 at Stony Brook University in NY. It was a joint meeting with the LIS CAC and many members of both committees were present. The main agenda item was a working session with break-out groups to discuss and contribute to the LIS CCMP and the progress made so far in updating it (see Agenda, **Attachment 2**). The second STAC meeting was on 12/20/2013 at the University of Connecticut – Avery Point campus. The Agenda for that meeting is **Attachment 3**.

6. Challenges/Changes: *Address difficulties you have encountered in carrying out this project, any slippages in meeting stated outputs or outcomes, and remedial actions (to be) taken. If the aims of the project have not changed from the original application, state this. If these have been modified, provide the revised aims and discuss the reason for the modification.*

Task 1: During this period, no-cost extensions were approved for the projects led by Hanson, Anisfeld, and Vaudrey. The extensions will allow final analyses and interpretation of the projects' results.

Task 2: Budget expenditures for the STAC had previously already utilized all Task 2 funds available in this award. During this reporting period, they also exceeded the Task 2 funds of the LI-97206912-0 award. Upon instruction from LISO, the cost overage is to be taken from Task 1 of the latter award.

7. Participants: *Provide basic information about each person who worked on the project – name, role on project, extent of time put in, and what the person has done on the project. Discuss any absence or changes of key personnel involved in the project. Describe the role of any partner organizations (if applicable) that have been involved with the project. Partner organizations may provide financial or in-kind support, supply facilities or equipment, or otherwise contribute.*

Task 1:

William Wise, NYSG Interim Director – minimal time involvement, reading NYSG Progress Reports to EPA.

Cornelia Schlenk, NYSG Assistant Director – involved with grant administration, reading the research project report, and preparing the progress reports to EPA for this award.

Lane Smith, NYSG Research Coordinator – minimal time involvement. Reading and summarizing the report from Tobias to occur early in 2014.

JeanAnn Johnston, NYSG Fiscal Officer – The fiscal officer continues to oversee the grants and Scholarships for the two NY projects that are still active.

Vacant, NYSG Senior Administrative Assistant.

8. Quality Assurance: *Address how the requirements of the Quality Assurance Project Plan (if applicable) are being met.*

Not applicable during this reporting period.

9. Funding Status: *Describe any funding issues that have impacted your progress toward stated goals and provide information on changes that need to be made or have been made to the budget.*

Task 1: The expenditures for the research projects during this period continued to be within budget. The budget for NYSG's administrative activities has been depleted since February 2013 and that account is closed.

Task 2:

The funds to cover STAC-related expenses from this award have been depleted. The costs incurred during this period for those activities were paid by the EPA award LI-97206912-

0. **First**, STAC co-chair Swanson was reimbursed for attending the LIS Management Committee meeting in Norwalk CT on 7/18/2013. The total cost for this was \$47.57 including IDC. **Second**, the costs paid for the 9/20/2013 joint STAC/CAC meeting were \$2,854.50 in total. **Third**, the costs for NY STAC members Swanson and Lonsdale to travel to the 12/20/13 STAC meeting in CT came to \$189.19 with reimbursement requests from Wilson and Findlay expected.

In total, more costs have been incurred on STAC-related expenses than were allocated for Task 2 (STAC) in the LI-97206912-0 award. The overage is about \$769.19. Following instruction from the LIS Office, the overage was paid from Task 1 funds in the 12-0 award.

No STAC costs were included in the FY12 or FY13 budgets to NYSG for STAC administration. The FY14, and subsequent, LIS budgets will need to include funds to cover costs of the STAC.

10. Future Activities: *Describe planned activities for the subsequent reporting period.*

Task 1: Completion Reports for the four projects that had not yet submitted them will be expected and reviewed by Sea Grant staff (Anisfeld, Vaudry, Hanson, and Lonsdale). The Reports will be shared between the two programs. NYSG will approach the co-chairs of the STAC to determine which 2014 meeting (in June or November) would serve well for all the projects to report out to the STAC.

Task 2: The next meetings of the LIS Science and Technical Advisory Committee are scheduled to take place on February 21, 2014, in NY and on June 20, 2014, in CT.

11. Presentations/Publications/Outreach: *Describe any major presentations you have made about your project and discuss any outreach efforts related to this project. Provide copies of any publications produced as part of the project. Report any articles or papers resulting from this project appearing in scientific, technical, or professional journals, if applicable. Copies of publications and reprints that have not previously been submitted to the LISS should be enclosed with the report.*

Publications:

None reported during this interval.

Presentations:

Tobias, C., P. Plummer, C. Cooper, D. Cady, and V. Rollinson (2013) Nitrogen removal capacity of Connecticut estuaries. Long Island Sound Research Conference, 19 April 2013, Port Jefferson, NY.

12. Other Information: *Attach any materials that represent or highlight project accomplishments during the reporting period or that support the explanations provided above.*

The following material is attached, as referenced above:

Attachment 1 – Completion Report for research project R/CTP-46-CTNY (Tobias)

Attachment 2 – Agenda for the 9/20/2013 Joint Meeting of the STAC and CAC in NY

Attachment 3 – Agenda for the 12/20/2013 Meeting of the STAC in CT

Report submitted by: Cornelia Schlenk, NYSG

Date: February 17, 2014

CONNECTICUT SEA GRANT PROJECT REPORT

Please complete this progress or final report form and return by the date indicated in the emailed progress report request from the Connecticut Sea Grant College Program. Fill in the requested information using your word processor (i.e., Microsoft Word), and e-mail the completed form to Dr. Syma Ebbin syma.ebbin@uconn.edu, Research Coordinator, Connecticut Sea Grant College Program. Do NOT mail or fax hard copies. Please try to address the specific sections below. If applicable, you can attach files of electronic publications when you return the form. If you have questions, please call Syma Ebbin at (860) 405-9278.

Please fill out all of the following that apply to your specific research or development project. Pay particular attention to goals, accomplishments, benefits, impacts and publications, where applicable.

Project #: _____ Check one: ☐ Progress Report ☒ Final report

Duration (dates) of entire project, including extensions: From [05/2012] to [12/2013].

- a.) Project Title or Topic: Nitrogen Removal Capacity of Connecticut Estuaries: Assessing Distribution and Controls

Principal Investigator(s) and Affiliation(s):

1. Craig Tobias – University of Connecticut

2.

3.

4.

A. COLLABORATORS AND PARTNERS: *(List any additional organizations or partners involved in the project.)*

Bongkuen Song – Virginia Institute of Marine Science

B. PROJECT GOALS AND OBJECTIVES:

The overall goal of the project is to examine the rates and underlying factors that control dissolved inorganic nitrogen removal at representative river estuaries that discharge to Long Island Sound (LIS). We focus on both denitrification and ANAMMOX to examine potential controls on their rates resulting from changing microbial and geochemical factors. We concentrate efforts on river estuarine gradients rather than on the Sound itself for two reasons: 1) biogeochemical gradients found in the Sound (e.g. salinity, primary production, DIN concentration) are replicated in these estuaries on a compressed spatial scale thus rendering a more tractable examination of DIN removal over entire gradients; 2) working in the river estuaries targets our efforts nearest DIN sources entering the Sound via watershed discharge, where total DIN removal is most important on a system scale. Specific objectives are:

- 1) Quantify the N removal rates via denitrification and ANAMMOX in the Niantic river.

- 2) Determine how the overall N removal capacity changes throughout the estuary and map spatial and temporal N removal “hot-spots”.
- 3) Quantify shifts in denitrification and ANAMMOX rates in response to observed changes in sediment and water chemistry along the estuarine axes.
- 4) Use multivariate analysis (PCA) to examine linkages among geochemical drivers, the distribution of N removal rates, and the ANAMMOX / Denitrifier microbial communities.
- 5) Develop and calibrate molecular based methods of estimating denitrification and ANAMMOX activity (Q-PCR and QRT-PCR) against ^{15}N tracer-based rate estimates.

C. PROGRESS: *(Summarize progress relative to project goals and objectives. Highlight outstanding accomplishments, outreach and education efforts; describe problems encountered and explain any delays.)*

This project was funded on a pilot/scaled budget basis. The scope of work reflects this level of funding.

- 1) All field sampling was completed in September 2012 (Fig 1). The following rates and environmental parameters were measured: 1) Rates – Denitrification and anammox using ^{15}N tracer techniques; 2) Sediments/porewater - Dissolved inorganic nitrogen, dissolved organic carbon, extractable ammonium, ferrous iron, sulfide, sediment chlorophyll, % organic, C:N, and microbial community/ activity metrics; 3) Water column – Dissolved inorganic nitrogen/phosphorus, temperature, salinity, dissolved oxygen. To date analysis of all these parameters with the exception of the microbial community measurements have been completed. ARCGIS software was successfully implemented to create geospatially accurate maps of ANAMMOX and denitrification, as well as maps showing the spatial distribution of sediment and water chemistry (see attached figures). We are currently using principle component analysis (PCA) to determine what chemical variables exert the greatest influence over the spatial variance of denitrification, ANAMMOX, and the ratio between these reactions.

D. PROJECT PUBLICATIONS, PRODUCTS AND PATENTS: *(Include published materials with complete references, as well as those which have been submitted but not yet published and those in press. Please attach electronic versions of any journal articles not previously provided.)*

The field work was only completed in Sept 2012. Sample processing and data analyses occurred in 2013.

Journal Articles: none to date / see below

Conference Papers and Presentations:

Tobias, C., Plummer, P., Cooper, C., Cady, D., Rollinson, V. Nitrogen removal capacity of Connecticut estuaries. Long Island Sound Program 2013 Meeting, Port Jefferson, NY.

Other articles, such as proceedings or book chapters: none

Web sites, Software, etc.: none

Technical Reports / Other Publications: none

Other Products (including popular articles): none

Planned Publications:

Manuscript preparation for Estuaries and Coasts or Estuarine Coastal and Shelf Science has begun and will be ready for peer review in 2014.

Patents: *(List those awarded or pending as a result of this project.)* none awarded nor pending.

E. FUNDS LEVERAGED: *(If this Sea Grant funding facilitated the leveraging of additional funding for this or a related project, note the amount and source below.)*

Approximately \$10K was leveraged from NSF-EAR-0711006.

F. STUDENTS: *(Document the number and type of students supported by this project.)*

Note: “Supported” means supported by Sea Grant through financial or other means, such as Sea Grant federal, match, state and other leveraged funds. If a student volunteered time on this project, please note the number of volunteer hours below.

Total number of **new*** K-12 students who worked with you: 0

Total number of **new** undergraduates who worked with you: 0

Total number of **new** Masters degree candidates who worked with you: 0

Total number of **new** Ph.D. candidates who worked with you: 0

Total number of **continuing**** K-12 students who worked with you: 0

Total number of **continuing** undergraduates who worked with you: 0

Total number of **continuing** Masters degree candidates who worked with you: 0

Total number of **continuing** Ph.D. candidates who worked with you: 1

Total number of volunteer hours: 0

*(Note: ***New** students are those who have not worked on this project previously. ****Continuing** students are those who have worked on this project previously.)*

In the case of graduate students, please list student names, degree pursued, and thesis or dissertation titles related to this project.

Student Name: Patrick Plummer

Degree Sought: PhD - Oceanography

Thesis or Dissertation Title: Nitrogen Removal in Long Island Sound Estuaries

Date of thesis completion: 05/05/2018

Expected date of graduation: 05/05/2018

G. PICTORIAL: Provide high resolution images/photos of personnel at work, in the field or laboratory, equipment being used, field sites, organism(s) of study. Attach images as separate files (do not embed). Include links to websites associated with the research project. Please include proper photo credits and a caption with date, location, names of people, and activity. These images are useful to document your project in future CTSG publications, websites and presentations.

FOR FINAL REPORTS ONLY, PLEASE COMPLETE THIS SECTION:

H. PROJECT OUTCOMES AND IMPACTS

RELEVANCE OF PROJECT: *(Describe briefly the issue/problem / identified need(s) that led to this work.)*

Human inputs and modifications have greatly altered the health of coastal marine environments, with estuaries often being the most effected. Estuaries serve an important role in the global ocean, removing roughly 75% of all terrestrial nitrogen prior to exchange with the coastal sea. Specific nitrogen loading into marine estuaries has increased by 2-20 fold over pre-industrial levels as a result of allochthonous sources including fertilizers, sewage treatments and fossil fuel emissions (Galloway et al., 2004). These increased nitrogen (N) levels can lead to eutrophication of estuaries, promoting overproduction of primary producers and harmful algal blooms, resulting in the creation of hypoxic zones (Burgin and Hamilton, 2007).

Long Island Sound (LIS) eutrophication is linked to nitrogen delivery from surrounding watersheds. Some of this N load is attenuated during transit from watersheds through river estuaries prior to entry into LIS. This study examines N removal via denitrification and anaerobic ammonium oxidation (ANAMMOX), as well as the competing and N recycling reaction of dissimilatory nitrite reduction to ammonium (DNRA) in one small Connecticut river estuary; the Niantic River. This river system possesses elevated nitrate concentrations seasonally, and is therefore an acceptable proxy to larger polluted systems within LIS (Klug 2006). Spatial characterization of these reactions was done in conjunction with extensive water column and sediment sampling for various geochemical analytes and microbial molecular markers, with efforts made to link rates to geochemical and/or molecular markers or possible competition with DNRA. Decoding these natural variables and linkages provides a better understanding of the ability of an estuary to naturally mitigate N pollution, and better access when an estuary may be beyond its capabilities.

RESPONSE: *(Describe briefly what key elements were undertaken to address the issue, problem or need, and who is/are the target audience(s) for the work.)*

This work integrated the ^{15}N isotope tracer based measurements of denitrification, Anammox, and DNRA rates, assessment of these bacterial communities using molecular microbial techniques, and geochemical characterization of estuarine water column and sediments. These variables were then analyzed using multivariate analysis to determining interdependency on the rates, and plotted onto geographic axes using GIS software. Information has already been presented at the Long Island Sound Conference (poster), and ultimately will be relevant for CT DEEP/NY DEP, as well as other agencies monitoring similar estuaries.

RESULTS: *(Summarize findings and significant achievements in terms of the research and any related education or outreach component; cite benefits, applications, and uses stemming from this project, including those expected in the future. Include qualitative and quantitative results.)*

The isotope tracer methods developed provide simultaneous analyses of denitrification, anammox, and DNRA on single samples. Geospatial maps were developed to understand the distribution of microbial nitrogen removal. These maps showed that denitrification and anammox are not spatially distributed in smooth gradients along the estuarine axis but rather show large variations captured by 3-4 “hotspots” (Figs 2-4).. These “hotspots”, as well as locations with minimum and median nitrogen removal were correlated to the assembled geochemical variable matrix. While certain elevated locations correspond to known areas of groundwater N input, the rates of N removal (estuary-wide) do not appear to be tightly correlated to single geochemical variables, and there appears to be differential controls on the nitrogen removal rates depending on location in the estuary.

The nitrogen removal processes of denitrification and anammox were shown to be strongly correlated throughout the river. Denitrification dominated anammox but multiple variables exhibited strong controls of both microbial communities (Fig 5). The magnitude of these controls were not constant for each community, with more controls being identified for anammox compared to denitrification. There does appear to be competition between DNRA and nitrogen removal; the highest areas of denitrification and Anammox were inversely correlated the DNRA rates. Conversely, the areas of highest DNRA do not demonstrate any correlation to denitrification or anammox. Thus it seems apparent that DNRA and nitrogen removal are controlled by a different set of variables, and that DNRA will outcompete in areas where the variables conflict. One of the environmental benefits is that the rates coupled with the spatial distribution permit calculation of the overall estuary scale NO_x removal (denitrification + anammox) vs. NO_x retention (DNRA).

The areas of highest denitrification (the largest removal reaction) were corresponded with the locations with the highest water column carbon and nitrogen concentrations, with a strong inverse correlation to the $\delta^{13}\text{C}$ and $\delta^{15}\text{N}$ values; this suggests that likely electron donor for denitrification within the river is C3 upland plants from terrestrial sources (Figs 6-7). The highest denitrification values also correlated to areas of lower salinity, which further suggests the terrestrial signature of the substrate. There is a lesser, but still significant positive control of denitrification exerted by both the chlorophyll a and phaeophytin concentrations below 1 cm of depth. This may suggest the use of benthic algae as an electron donor, but does not correlate with other sediment variables tested. The lack of response to chlorophyll a and phaeophytin in the 1st cm of sediment, coupled with the lack of a correlation to carbon or nitrogen percentage in sediments, only repetition of inverse relationship to the $\delta^{13}\text{C}$ value, further suggests terrestrial organic matter buried in the anoxic sediments. The perceived organic carbon type controls on denitrification suggest links between watershed carbon management and downstream nitrogen removal efficiency.

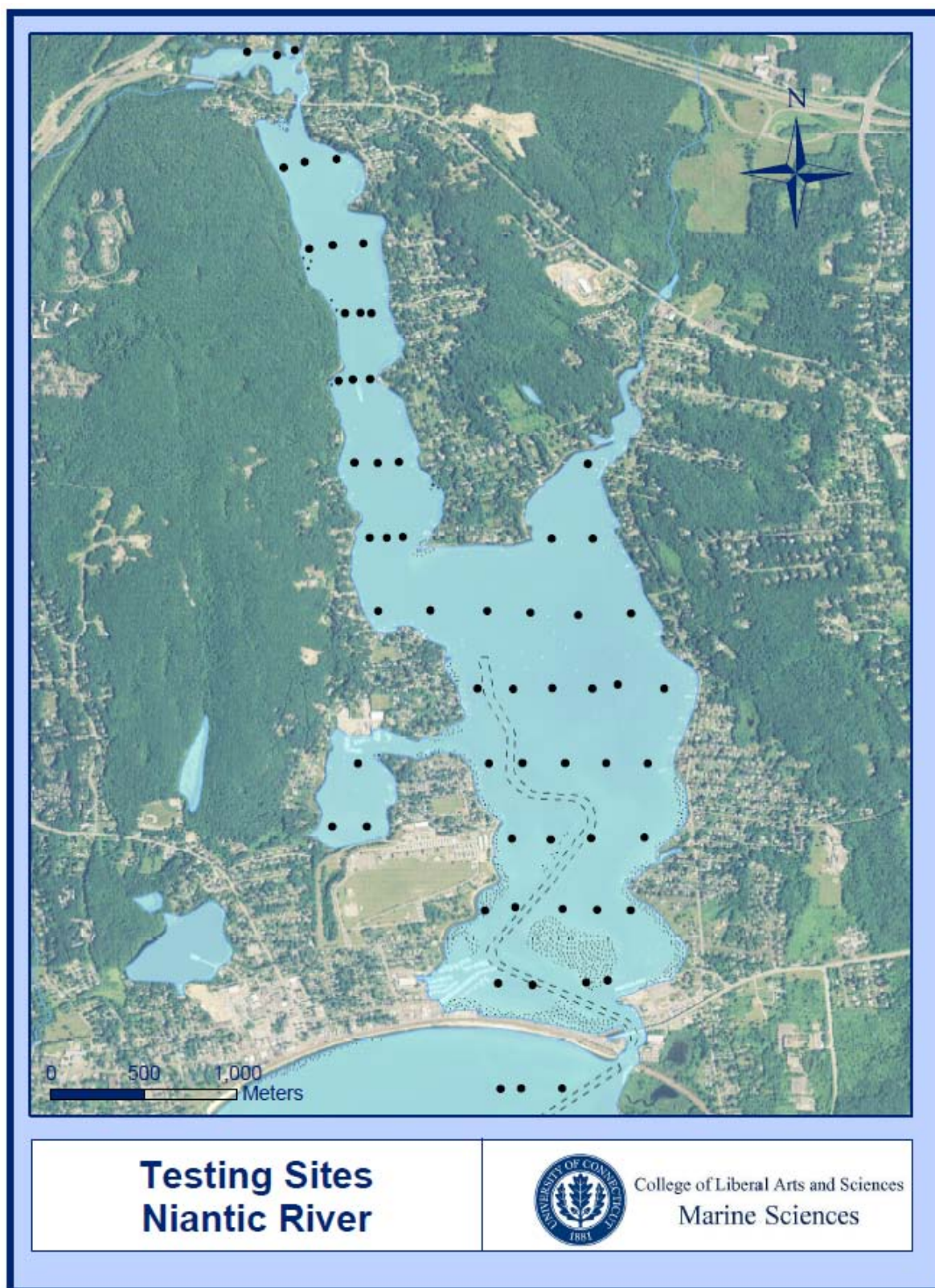


Figure 1. Niantic River sampling locations.

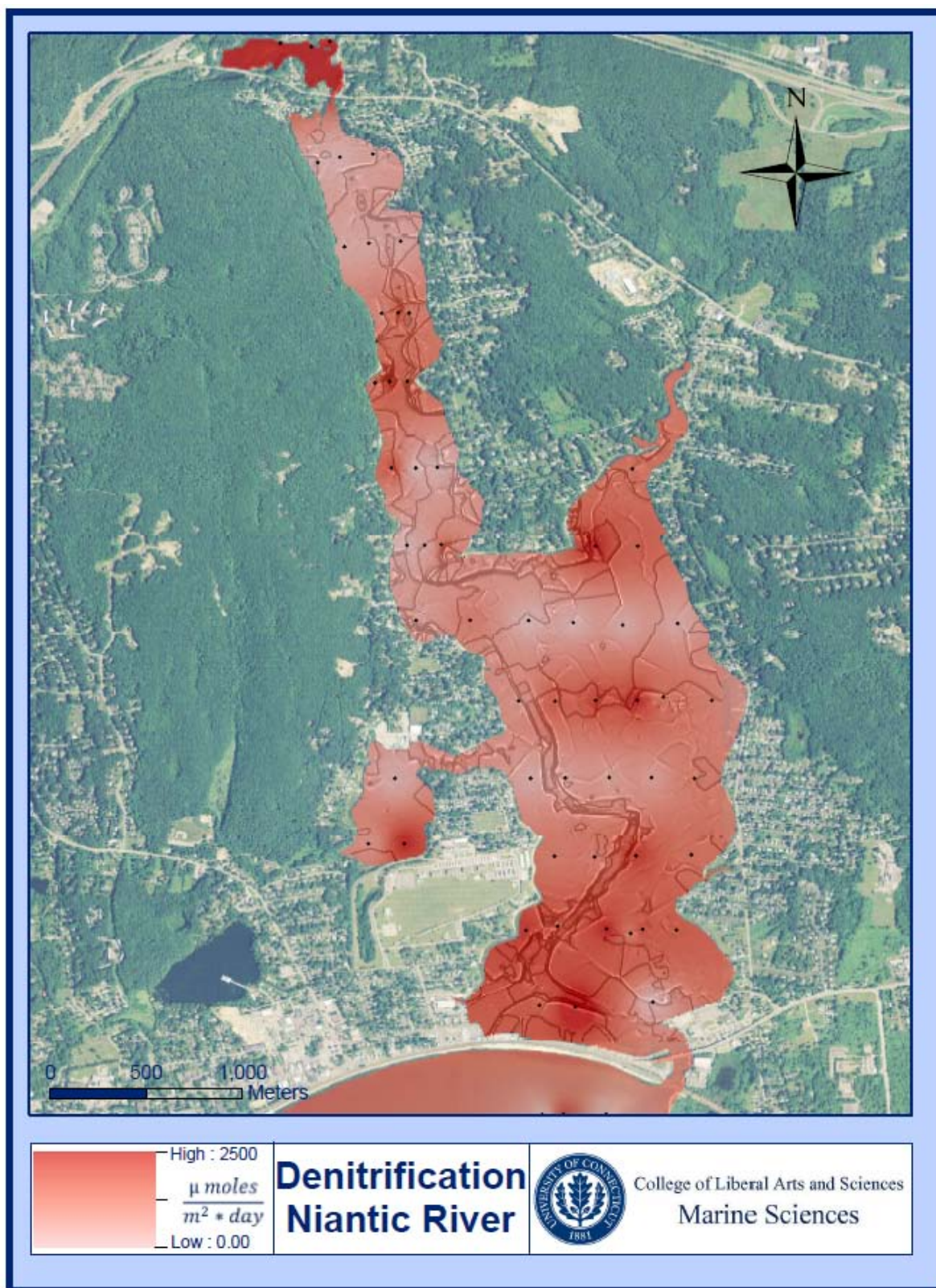


Figure 2. Niantic River denitrification distribution.

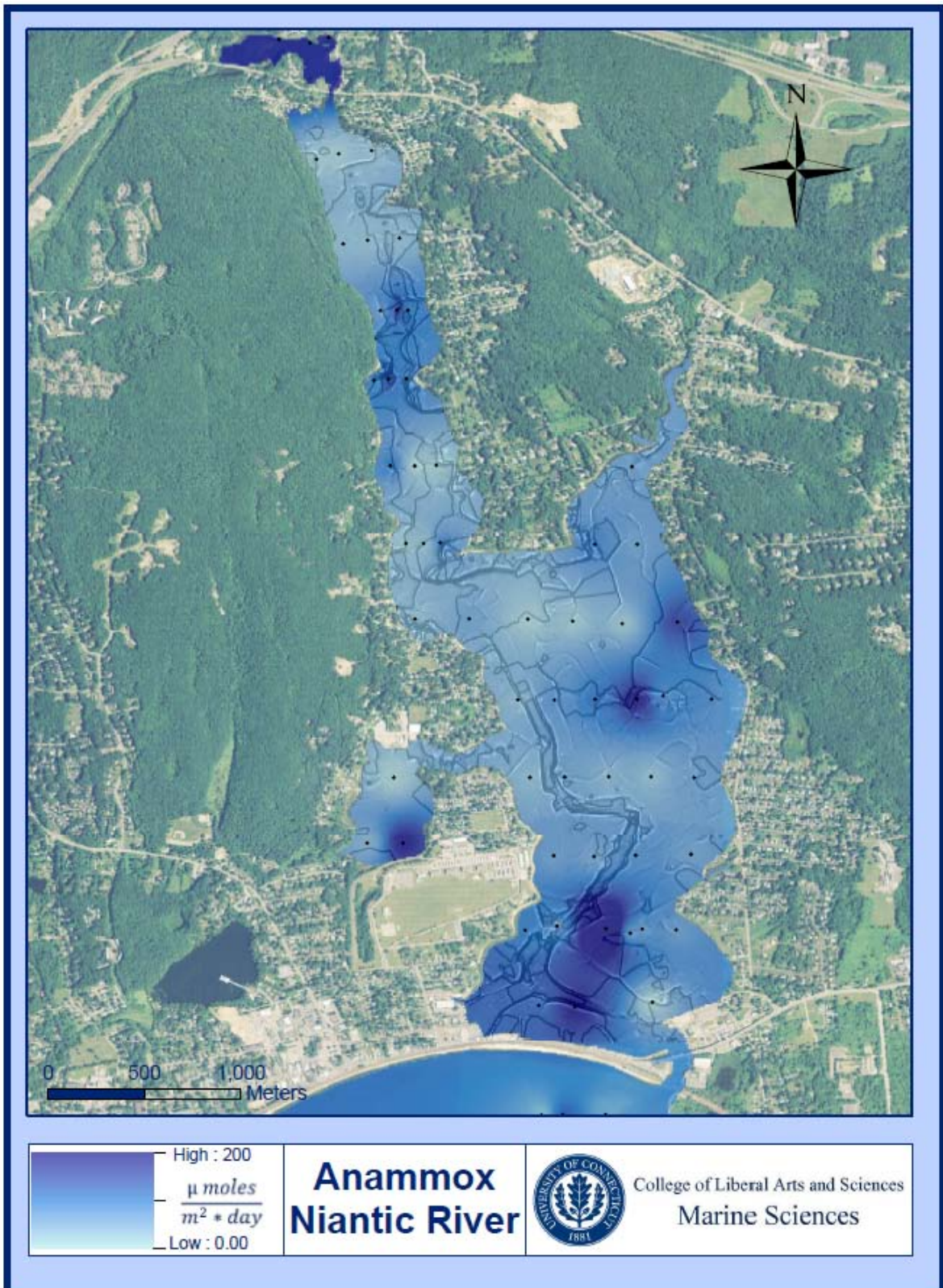


Figure 3. Niantic River anammox distribution.

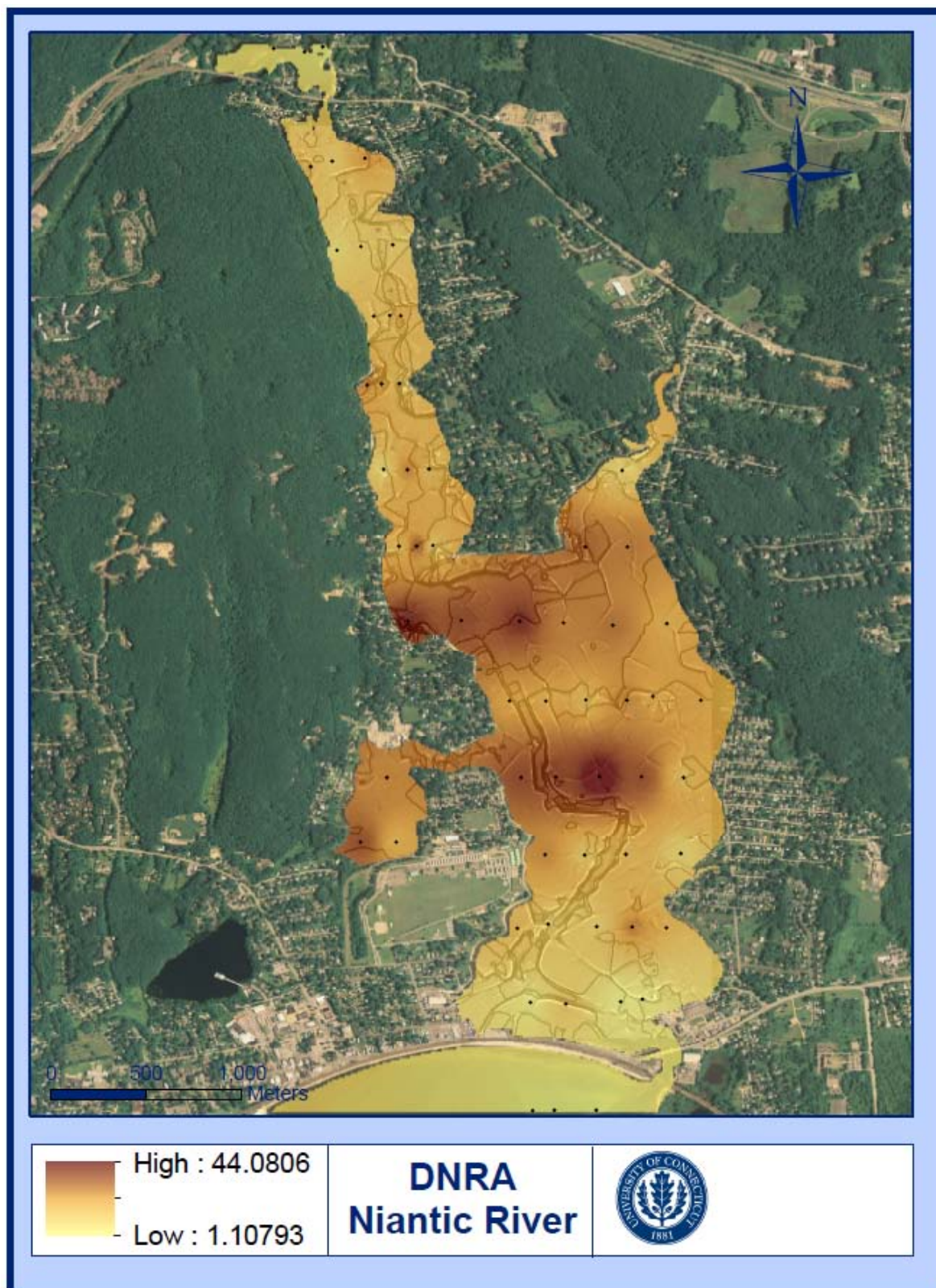


Figure 4. Niantic River DNRA distribution.

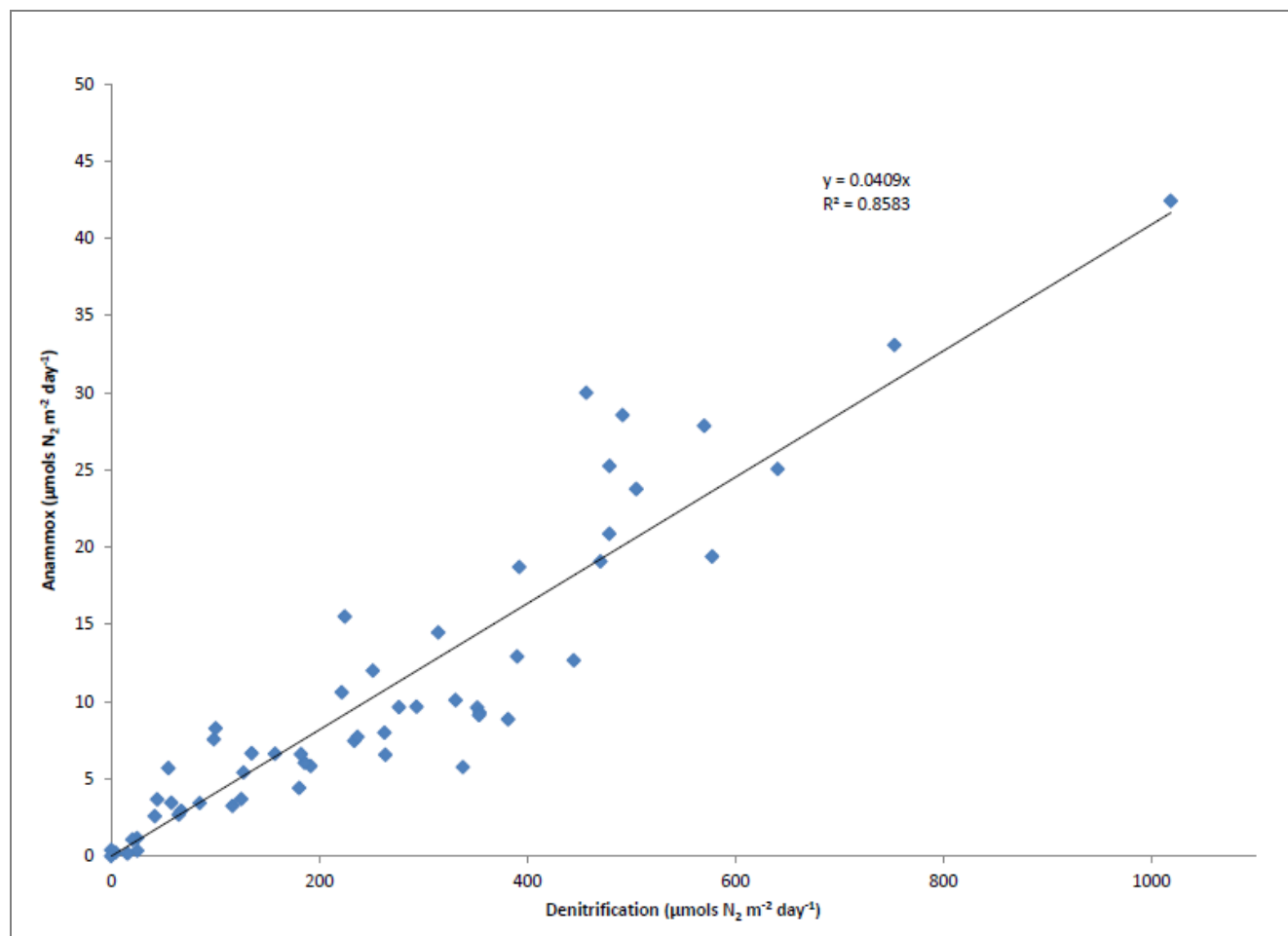


Figure 5. Anammox and denitrification regression. All data.

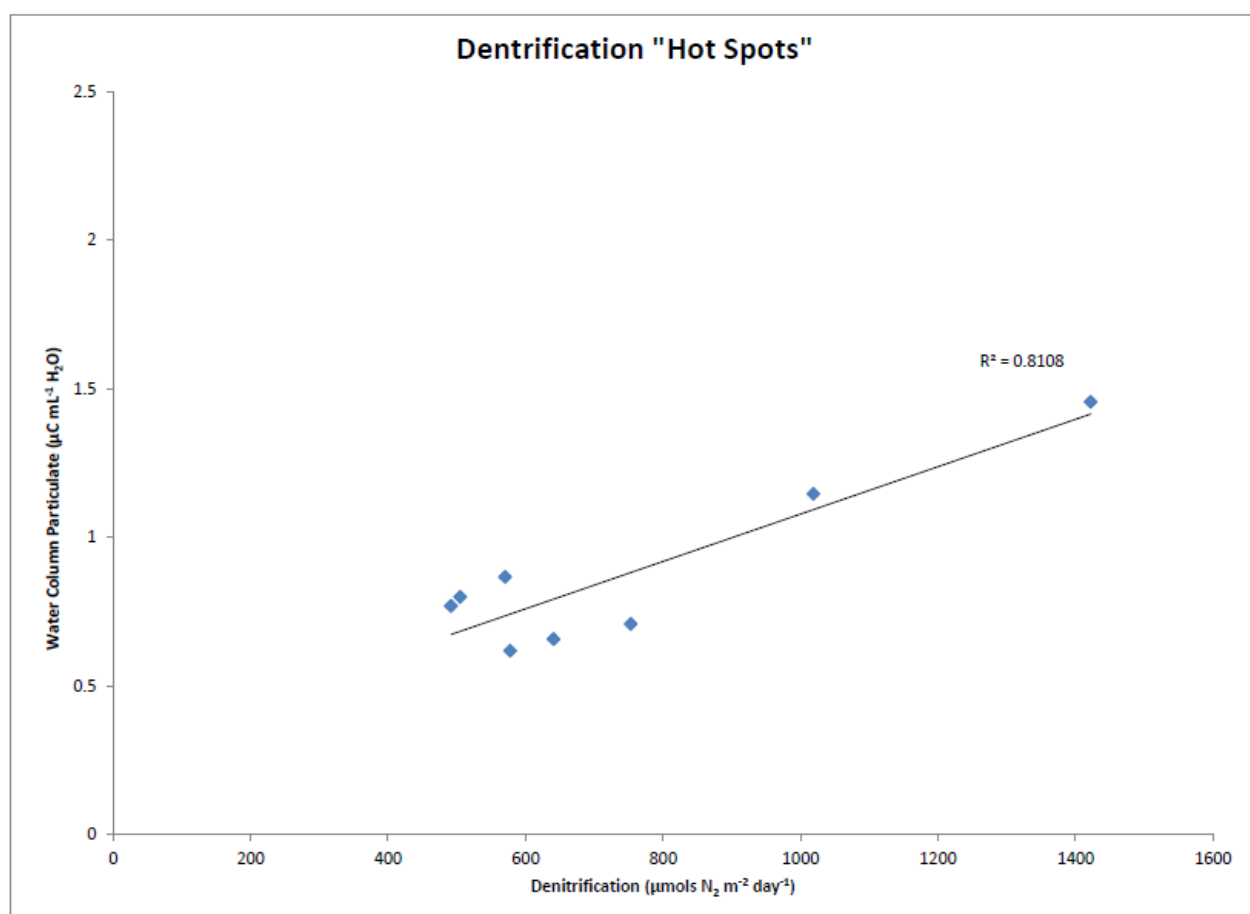


Figure 6. Relationship between elevated denitrification rates and water column particulate carbon. Hot-spots defined as rates > 2 standard deviations above the mean.

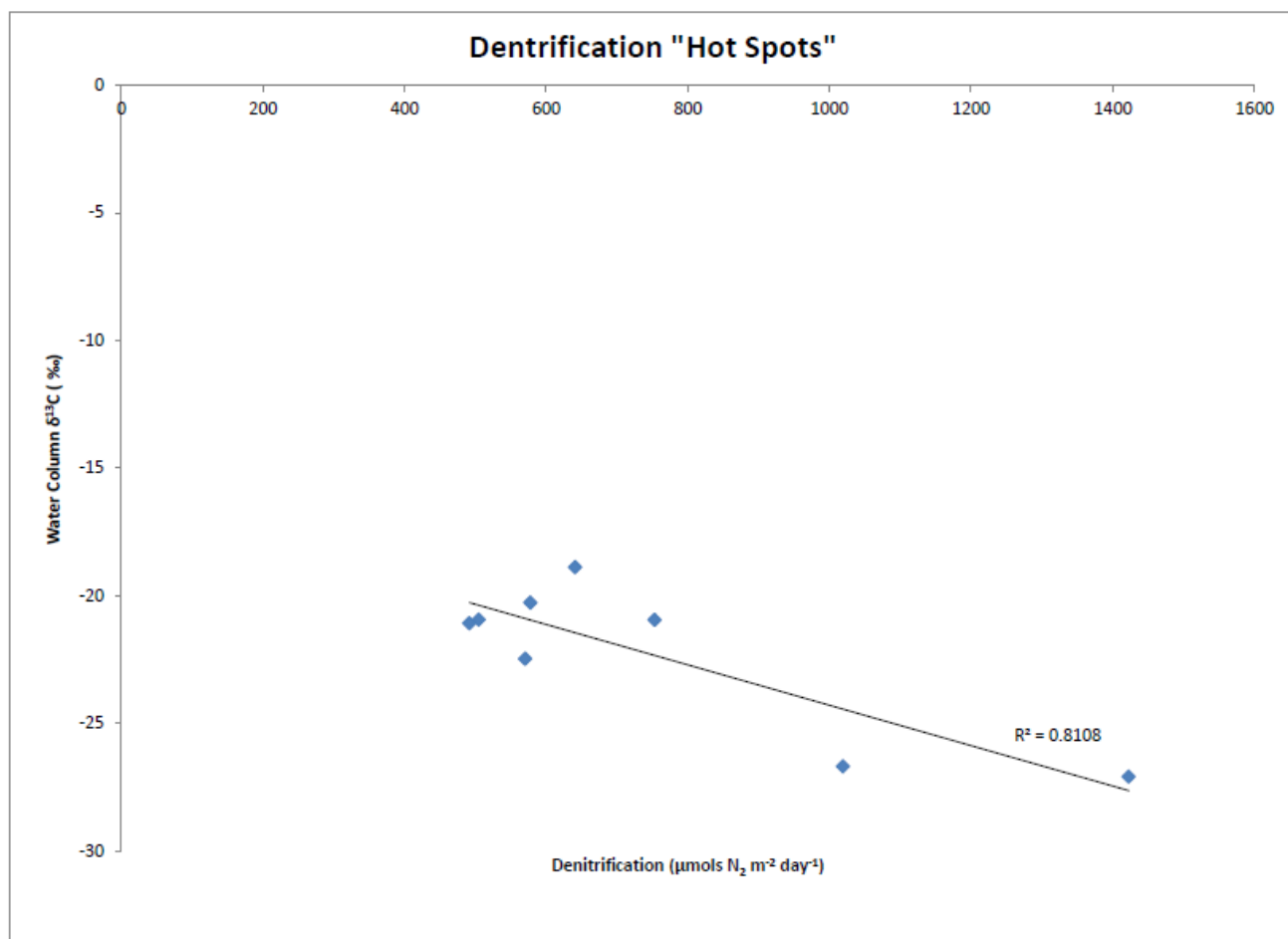


Figure 7. Increasing denitrification rates related to the presence of isotopically light carbon. The watershed likely delivers carbon with $\delta^{13}\text{C} < 25$ per mil.



Restoring & Protecting the Sound Since 1985

Attachment 2

JOINT MEETING OF THE CITIZENS ADVISORY AND SCIENCE AND TECHNICAL ADVISORY COMMITTEES

OF THE LONG ISLAND SOUND STUDY

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<http://www.longislandsoundstudy.net>

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AGENDA

FRIDAY, SEPTEMBER 20, 2013

WANG CENTER, ROOM 201

STONY BROOK UNIVERSITY CAMPUS, STONY BROOK, NY 11794

<http://www.stonybrook.edu/sb/maps>

9:00	Registration and Coffee	
9:15	Welcome, Housekeeping & Logistics Member Roll Call/Quorum/Introductions	Nancy Seligson and Larry Swanson
9:30	Results of Survey of Stakeholder Perceptions of Long Island Sound Christine O'Connell, Ph.D., Stony Brook University	
10:00	Comprehensive Conservation and Management Plan (CCMP) Update Update and Timeline Looking at the Big Picture <i>Vision and important investments in the Sound</i>	Jim Latimer Mark Tedesco
10:30	Break-out Sessions Attendees split into 4 groups (below) to answer these questions: Within your theme, what are the top funding needs and what is the most important message to communicate? With additional resources, how would you prioritize funding?	
12:00 pm	Lunch	
12:30	Group Break-out Reporting (10 minutes each) 1. Waters and Watersheds, led by Jason Krumholz 2. Habitats and Wildlife, led by Georgia Basso 3. Sound Communities, led by David Miller 4. Science and Management, led by Larry Swanson	
1:10	Discussion and Consensus	Jim Latimer
2:00	Next Steps, Follow Up & Wrap Up	CAC/STAC Chairs
2:30	Adjourn	

UPCOMING MEETINGS: Management Committee – Oct. 17, Stewardship Initiative Work Group – Oct. 25, Science and Technical Advisory Committee – Nov. 8, NPS/Watersheds Work Group – Nov. 13, Habitat Team – Dec. 10, Citizens Advisory Committee – Dec. 12

The Long Island Sound Study is a cooperative Federal/state Management Conference researching and addressing the priority environmental problems of the Sound identified in the Comprehensive Conservation and Management Plan. The Citizens Advisory Committee provides support to the Management Conference partners in implementing the CCMP.



A Partnership to Restore and Protect the Sound

SCIENCE & TECHNICAL ADVISORY COMMITTEE

of the Long Island Sound Study
website: <http://www.longislandsoundstudy.net>

LONG ISLAND SOUND STUDY SCIENCE AND TECHNICAL ADVISORY COMMITTEE

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CAC LIAISONS

Howard Weiss, Project O
Jennifer Wilson-Pines, MBPC

The STAC meets three times annually on the second Friday of February, June and October or as otherwise scheduled. Meetings are open to the public.

LISS Science & Technical Advisory Committee Meeting Friday, December 20, 2013 University of Connecticut, Avery Pt. Campus, Marine Sciences 103

AGENDA

- | | |
|-----------------|--|
| 9:00 am | Coffee |
| 9:15 am | Introductions, Membership discussion 2014 meeting schedule
<i>Jim O'Donnell, UCONN, Larry Swanson, SBU</i> |
| 9:30 am | Citizen Advisory Committee Update, Nancy Seligson, Town of Mamaroneck, Curt Johnson, CFE |
| 9:45 am | 2014 Budget Update, Mark Tedesco, EPA LISO |
| 9:50 am | LIS Report Card Project, Heath Kelsey, UMCES |
| 10:40 am | Geochemistry/Oxygen Exchange in LISS, Mark Altabet, UMASS |
| 11:20 am | CCMP Update: Developing Ecosystem Targets, Jim Latimer, EPA AED |
| 12:00 am | Lunch (Provided) |
| 12:30 pm | Water Quality/Monitoring Update, Jason Krumholz, NOAA |
| 12:45 pm | Eelgrass Model Presentation, Jamie Vaudrey, UCONN |
| 1:15 pm | A Long Term Habitat View For Eelgrass, Tim Visel, Sound School & CAC |
| 1:30 pm | SWEM Presentation/Discussion, Jim O'Donnell |
| 2:00 pm | Data Archiving Discussion, Jim O'Donnell |
| 2:15 pm | New Business / Future STAC Agenda items Jim O'Donnell/Larry Swanson |
| 2:30 pm | Adjourn |

The Long Island Sound Study is a cooperative Federal/state Management Conference researching and addressing the priority environmental problems of the Sound identified in the Comprehensive Conservation and Management Plan. The Science and Technical Advisory Committee provides scientific and technical support to the Management Conference partners in implementing the CCMP.